



# Testing -- Annual Operability and Integrity





# Topics to be Covered

- *Types of tests defined in regulations*
- *Petroleum Equipment Institute (PEI) test forms*
- *FIRST test entries*
- *Test form submittals – examples*
- *Tricks of the trade*





# Types of Tests

**“Operability test” – to determine if:**

- **Release detection - electronic and mechanical**
- **Overflow protection**

**are functioning as designed, and  
in accordance with manufacturers’ specifications**



# Types of Tests

## “Operability test”

**Required annually, not to exceed 12 months for:**

- **Overfill protection**
- **Release detection**



# Types of Tests

**“Integrity test” – determination of liquid **tightness** of system or component using one of the following:**

**(a) “*Interstitial* integrity test” – evaluation of interstice**

- **Double-walled tank**
- **Double-walled component (piping)**
- **Methods are certified by Nationally Recognized Laboratory**





# Types of Tests

## “Integrity test” – cont.

(b) “*Primary integrity test*” – evaluation of liquid **tightness** of

- Primary tank (liquid storage area)
- Integral piping (liquid storage area)



# Types of Tests

## “Integrity test” – cont.

(c) “*Containment integrity test*” – evaluation of liquid **tightness** of

- Hydrant pits
- Isolation valve pits
- Piping sumps
- Dispenser sumps
- Spill containment systems

Includes “Hydrostatic test” that uses liquid pressure and equilibrium



# Types of Tests

## “Integrity test” – Schedule

- ***Interstitial* integrity tests – at time of installation and subsequent repair for:**
  - Double-walled tanks
  - Double-walled component (piping)
- ***Containment* integrity tests – by 10/13/18, then every 3 yrs. for:**
  - Piping sumps
  - Dispenser sumps
  - Double-walled spill containment
  - (Single-walled spill containment by 1/11/17, then annually)





# Types of Tests

## “Integrity test” – Schedule cont.

- ***Primary* integrity test – ??**



# Types of Tests

“Integrity test” – Breach of integrity

**The regulations do not include the word “breach.”**



# PEI Forms

## **RP1200: Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities (2017 Ed.)**

- **Produced as an industry service**
- **Provides a concise summary of general guidelines for testing**





# PEI Forms

## RP1200 – cont.

<https://www.pei.org/rp1200>



# PEI Forms

## RP1200 – cont.

### For *interstitial* integrity tests:

- **C-1: Tank secondary containment (vacuum)**
- **C-2: Piping secondary containment (vacuum)**
- **C-3: Spill containment (vacuum & hydrostatic)**



# PEI Forms

## RP1200 – cont.

### **For *containment* integrity tests:**

- **C-3: Spill containment (vacuum & hydrostatic)**
- **C-4: Piping sumps**





# PEI Forms

## RP1200 – cont.

### For *annual operability* tests:

- **Overflow protection**
  - ✓ **C-5: Ball valves & floats**
  - ✓ **C-6: ATG, alarms**
  - ✓ **C-7: ATG**
  - ✓ **C-8: Liquid sensors/probes**
- **Release detection**
  - ✓ **C-9: Line leak detectors (electronic & mechanical)**



# PEI Forms

## RP1200 – cont.

## NON-PEI FORMS



# PEI Forms FIRST Entries

<http://prodenv.dep.state.fl.us/DwmFirst/index.html#/>

[https://floridadep-my.sharepoint.com/personal/allen\\_rainey\\_floridadep\\_gov/Documents/Forms/All.aspx?RootFolder=%2Fpersonal%2Fallen\\_rainey\\_floridadep\\_gov%2FDocuments%2FSTORAGE%20TANKS%2FPresentations&FolderCTID=0x0120008F743421449BF240B04ED7A7C8103E46&View=%7B4548B9E7-382A-49E9-A3B8-9D0523C8A137%7D](https://floridadep-my.sharepoint.com/personal/allen_rainey_floridadep_gov/Documents/Forms/All.aspx?RootFolder=%2Fpersonal%2Fallen_rainey_floridadep_gov%2FDocuments%2FSTORAGE%20TANKS%2FPresentations&FolderCTID=0x0120008F743421449BF240B04ED7A7C8103E46&View=%7B4548B9E7-382A-49E9-A3B8-9D0523C8A137%7D)